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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,755	08/06/2001	Borislav Zlatanov	3521.160	2142

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EXAMINER

NGUYEN, LAM S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,755

Applicant(s)

ZLATANOV, BORISLAV

Examiner

LAM S NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Drawings

New corrected drawings are required in this application because all figures are informal. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 cites the trademark "MYLAR" that is used in the claim as a limitation to identify or describe a particular material or product for the fast-drying ink adhering to. Therefore, the claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product and the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. *See MPEP 2173.05(u) Trademarks or Trade Names in a claim.*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hallman et al. (US 5820932) in view of Sagues et al. (US 6275742).

Hallman et al. disclose an apparatus for masking a workpiece coated with a photosensitive layer, to prevent exposure of select regions of the photosensitive layer (FIG. 3a-c), comprising:

Referring to claim 1:

an ink delivery device (FIG. 1, element 12) arranged to be in communication with the photosensitive layer of the workpiece for providing a masking pattern of opaque ink on a photosensitive layer (column 4, line 18-29).

Hallman et al. do not disclose the comprising of a workpiece pre-aligner for movably supporting and aligning the workpiece underneath the print head, wherein the pre-aligner includes a rotation member capable of engaging and rotating the workpiece (**Referring to claims 3, 17**), and wherein the pre-aligner includes a movable arm capable of engaging and supporting the workpiece, wherein the arm is in operative communication with a workpiece stage of a lithography tool (**Referring to claim 4**), and wherein the control unit is connected to the pre-aligner so that information about the workpiece state can be provided to the control unit (**Referring to claim 6**).

Sagues et al. disclose a wafer aligner system having an aligner device (FIG. 1, element 14) including a rotation member (FIG. 2, element 30) capable of engaging and rotating the workpiece (FIG. 2, element 12) and a movable arm (FIG. 1, element 18, 20, 22) capable of engaging and supporting the workpiece for manipulating and aligning a semiconductor wafer (Abstract), wherein the information about the workpiece state is

provided to a controller for calculating the angular and distance offset of the wafer center (Abstract).

Therefore, it would have obvious for one having ordinary skill in the art at the time the invention was made to modify the apparatus for masking a workpiece as disclosed by Hallman et al. such that including the wafer aligner device having a rotation member and a movable arm capable of engaging and supporting the workpiece as disclosed by Sagues et al. The motivation of doing so is to be able to manipulate and align a series of semiconductor wafers by robot arms as taught by Sagues et al. (Abstract).

Hallman et al. also disclose the following claimed invention:

Referring to claim 2: wherein the ink delivery device is connected to a control unit that controls the deposition of ink onto the photosensitive layer (FIG. 1, element 11) .

Referring to claim 5: wherein the photosensitive layer is a negative tone dry film resist (column 4, line 50-55).

Referring to claims 7-8: wherein the control unit is connected to a main controller of a lithography system and the pre-aligner is part of a lithography tool (Abstract and column 1, line 5-15, and FIG. 1, element 15 is a part of the lithography system).

Referring to claims 10, 16: wherein the ink delivery device is movable over the workpiece (FIG. 1: the printer moves in X and Y directions).

Referring to claims 11, 15: wherein the controller is programmable so as to form a desired masking pattern on the workpiece (column 3, line 5-20: the program is programmed in the digital computer system).

Referring to claims 12, 14: wherein the ink delivery device includes an inkjet head (Abstract).

Referring to claims 13: A method of selectively masking a photosensitive workpiece, comprising selecting one or more regions of the photosensitive workpiece surface to remain unexposed and masking the one or more select regions of the workpiece with a layer of ink that is opaque to a wavelength of radiation that activates the photosensitive workpiece (FIG. 3a-c).

Referring to claim 9: wherein the ink delivery device delivers fast-drying ink that adheres to MYLAR (column 4, line 14-36: monomers and initiator).

2. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hallman et al. (US 5820932) in view of Sagues et al. (US 6275742), as applied to claim 13, and further in view of Cheng (US 5546179).

Hallman et al., as modified, disclose the claimed invention as discussed above except wherein the workpiece is round and has an edge, and the one or more select regions include a narrow annulus adjacent the workpiece edge (**Referring to claim 18**), wherein the masking includes forming one or more alphanumeric characters or bar code (**Referring to claims 19-20**), and wherein the masking is formed outside of an area of the workpiece where exposure fields are to be formed (**Referring to claim 21**).

Cheng discloses an apparatus having a workpiece which is round and has an edge (FIG. 8, 8A, element 22), wherein the workpiece includes an identification marks which are specific codes which can be read such as a bar code (column 14, line 62-67 and (FIG. 8, 8A: the bar code 150) on a narrow annulus adjacent the workpiece edge (FIG. 8, 8A: the corresponding annulus region having the marks 150) which is formed outside of an

area of the workpiece where exposure fields are to be formed (FIG. 8, 8A: the center area of the wafer 22).

Therefore, it would have obvious for one having ordinary skill in the art at the time the invention was made to modify the masking apparatus disclosed by Hallman et al., as modified, to form masks such as alphanumeric characters or bar code outside of an area of the workpiece where exposure fields are to be formed as disclosed by Cheng. The motivation of doing so is to be able to map the edge of a wafer on a rotatable testing chuck in order to allow the edge and other characteristics of a wafer to be determined quickly and accurately as taught by Cheng (column 2, line 32-45).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (703)308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN
January 20, 2004


HAI PHAM
PRIMARY EXAMINER